

# **SOLAR PONDS DEBRIS CHARACTERIZATION STUDY**

**ADMIN RECCRD**

**1101-A-000254**



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## 1 PURPOSE

This document includes a discussion regarding the decision process utilized to characterize waste in and around the 207 Cluster Solar Ponds A, B & C (Solar Ponds). The waste at the Solar Ponds refers to miscellaneous pieces of usable equipment, recyclable materials, landfill items, Low Level Mixed Waste (LLM) and Straight Low Level Waste (LLW). Furthermore, this also provides guidance for the proper segregation of the waste in and around the Solar Ponds. The segregation is based upon the proper characterization of the waste and ultimate disposition and/or disposal method.

## 2 OVERVIEW

The characterization of the waste in and around the Solar Ponds was conducted in an integrated manner, incorporating the following processes and areas of expertise:

- ⇒ capture of process knowledge
- ⇒ physical walkdown and visual inspection
- ⇒ interaction with operations personnel
- ⇒ interaction with radiological engineering
- ⇒ interaction with radiological operations
- ⇒ collection of previous radiological and other data
- ⇒ photography to capture visual references
- ⇒ reviews from persons with process knowledge
- ⇒ reviews from persons with procedural knowledge
- ⇒ reviews from persons with supervision and project responsibilities
- ⇒ tabulation and presentation of data

The segregation, handling and packaging will be conducted by operations personnel. The segregation will have adequate supervision to ensure that wastes are not inadvertently commingled (i.e., Haz with Non-Haz, Rad with Non-Rad). The segregation and packaging is based on the characterization of the waste, packaging & storage requirements, other site procedures (i.e., WO-1100, Waste Generating Instructions [WGI], PU & D and landfill requirements, etc.) as well as ultimate disposition facility requirements.

## 3 DEFINITIONS

**Box** This term is used at this Site to refer to Plywood Boxes and Standard Waste Boxes (SWBs).

**Container** The innermost vessel which contains the waste form, i.e., aerosol cans, gas cylinders, or other air-tight containers. Note that the term "package", as used in Department of Transportation (DOT) regulations, has replaced the old definition of container (e.g., serialized white drum or SWB used for shipping radioactive or mixed waste).

**Control** The process of maintaining physical custody of waste from the time of generation, until it is placed into a controlled waste package. This process maintains the integrity of the waste and ensures that only waste generated from a particular activity, waste stream or process is placed into a controlled waste package and accurately documented.

**Customer Service Organization (CSO)** The entity made up of Customer Service Representatives and support personnel that provides waste characterization and generation assistance to waste generators.

**Customer Service Representatives (CSR)** The individual(s) within the RMRS Customer Service Organization that function as a single point of contact for waste generators from planning to generate waste through turnover of the waste to Waste Management for disposal.

**Hazardous Waste** For the purposes of this document, hazardous waste refers to Resource Conservation and Recovery Act -regulated (RCRA-regulated) hazardous waste. A RCRA-regulated hazardous waste is defined as

a waste that exhibits certain hazardous characteristics or is a listed hazardous waste (refer to 6 CCR 1007-3, Sections 260 through 280 for an expanded definition)

**Low-Level Mixed Waste (LLMW)** Low-level waste containing both radioactive and hazardous components as defined by the Atomic Energy Act and RCRA respectively

**Low-Level Waste (LLW)** Material having no economic value that is contaminated with transuranic elements (that is, americium and plutonium) at a level of specific activity less than 100 nCi per gram (nCi/g, 100 nCi/g is equal to 3,700 Becquerel/g) of waste material, or wastes contaminated only with nonfissile uranium in any quantity. Fissile isotopes of uranium (e.g., U-233, U-235) are limited to less than 15 grams per Strong Tight package

**Mixed Waste** Radioactive waste, LLW or TRU, contaminated with hazardous constituents exhibiting hazardous characteristics (as defined in 40 CFR 261 and 6 CCR 1007-3)

**Segregate** To isolate, separate, or sort according to contamination level, IDC, WFC, compatibility, and hazardous or non-hazardous constituency

**Waste Generator** Any person whose act or process produces a waste or whose act causes a waste to become subject to regulation or Department of Energy (DOE) order. This includes any individual who works at the Site (i.e., employees, subcontractors, and DOE contractors) who, as a result of any work activity, generates a waste material that requires packaging and disposal, and who is properly and sufficiently trained and qualified to be responsible and accountable for correct and compliant waste packaging in accordance with the requirements of this document and supporting procedures

**Waste Generator Instruction (WGI)** A document prepared by the Customer Service Organization that provides the necessary instructions for characterizing, documenting, and packaging waste compliantly for disposal. The WGI will be specific to the waste generation project, specifying the number and type of waste containers, necessary container labeling, required packaging material, and the required supporting documentation for subsequent disposal. This document will also provide a set of concise requirements on how to package the waste based on the requirements specified in the Site procedures, as well as the off-site disposal facility's waste acceptance criteria

**Waste Item** The waste itself. The majority of waste items are bagged. Waste items are placed into a waste package

**Waste Package** The 55-gallon drum, SWB, or Plywood Box, with the appropriate liner(s), and the waste contents as presented for transport (49 CFR 173.403)

#### 4 LIMITATIONS, PRECAUTIONS & CONTROLS

##### 4.1 Limitations & Precautions

Limitations will be in place with regard to health and safety of the operations personnel and protection of the environment during segregation, handling and packaging of the waste. These limitations will be in the form of Personal Protective Equipment requirements (PPE), WGI and/or other documents such as Integrated Work Control Packages or operating procedures

##### 4.2 Controls

A 90 day waste accumulation area will be established at the point of waste generation. This will allow for operations to perform the work in a compliant and expeditious fashion. The 90 day area will be relocated when operations warrant (e.g., debris packaging is moved from South of the A/B Ponds to North of the C Pond). All appropriate inspections of the 90 day areas will be conducted. Furthermore, the debris lay-down areas will be

visually inspected each day that personnel are working the removal project in the field. This will be done to ascertain whether any additional materials have been placed in these areas or if the areas have been disturbed.

## 5 WASTE CHARACTERIZATION PROCESS

### 5.1 Walkdown & Capture of Process Knowledge

An initial walkdown of the waste was conducted with personnel cognizant of the processes conducted at the Solar Ponds. This was conducted several times to ensure adequate transfer of information. The walkdown included a visual inspection of the waste with discussion regarding past use of the materials. In most cases discussion included whether the material was used in the transfer and/or transport of the Solar Pond material or if it was intended to be used but was never placed in service or was never used in this process (i.e. natural gas piping). In a few instances it could not be ascertained as to the exact usage of the material or whether the potential for contamination exists.

Note that an emphasis toward the conservative was placed on the characterization data documented. This means that an item that is initially deemed to be a LLM waste may be down-graded, as we are moving and packaging the material, to LLW or material that may be released to recycling or landfill. This may be based on further inspection of the item and/or radiological survey information or the potential for decontaminating the item to remove it from RCRA.

### 5.2 Personnel Interaction

In conjunction with the above process input from Operations (i.e. 750 Pad, Landfill, PU & D, Transportation and Customer Service Personnel), Radiological Operations (i.e. RCT's and Supervision), and Radiological Engineering was solicited. This interface included discussions regarding the current thought process for dispositioning of the waste. If a group or individual was in disagreement or had concerns or other ideas regarding the direction being taken it was taken into consideration for the final disposition of the waste. Also discussed were the radiological survey and documentation actions for obtaining Property/Waste Release Evaluations (P/WRE's) for unrestricted usage of materials (e.g. potential PU & D items).

### 5.3 Collection of Previous Data

Some effort in the characterization of the waste had been completed to some degree in the past. This effort included various means of documentation and communication as described in the following: A collection and tabulation of data showing existing materials and potential disposition (some of these materials are still present). Completion of several P/WRE's for items that were never placed into service. Preparation of radiological contamination survey data for several pieces of equipment. Memos and notes relating current efforts for management of the waste. This data was reviewed and utilized to help in the final disposition of the current waste and is included as appendices.

### 5.4 Photography

Photography services were procured to capture a visual reference of most of the waste in question. The photographs are only included in the main characterization study (not with all copies of this document). The photographs are referenced by the negative number which is on the back of each photograph and these numbers are tabulated in the attached characterization matrix entitled Solar Ponds Debris Characterization Study. The range of numbers is 50204-9 through 50204-24, 50205-1 through 50205-12 and 50205-17 through 50205-24. These photographs may allow for additional control during the segregation process.

### 5.5 Reviews

Various levels of review were conducted by personnel directly involved in operational, procedural and supervision aspects for this project. All comments received were considered and incorporated into the final product. These reviews were necessary to ensure that all dispositioning, segregation, handling, and packaging of

the wastes are conducted with regard to the protection of human health and the environment and best management practice for efficient and cost effective removal of the wastes

#### 5.6 Tabulation & Presentation

The above information has been tabulated and presented in this document in the attached appendices. The table entitled Solar Ponds Debris Characterization Study is a concise presentation of collected information that should be utilized to aid in the segregation, handling and packaging of the wastes.

### 6 SEGREGATION & PACKAGING, SCHEDULE, HANDLING & SHIPMENT

#### 6.1 Segregation & Packaging

Segregation of the waste will be conducted in a step-wise manner to ensure that hazardous wastes are not commingled with non-hazardous wastes and radiological wastes are not commingled with non-radiological wastes. The step-wise manner will follow the scheme below:

- ⇒ Identify and segregate low level mixed wastes
  - ⇒ Identify and segregate wastes to be decontaminated (i.e., removed from RCRA) and remove to an "impound area" for decontamination
- ⇒ Identify, segregate and package wastes not to be decontaminated
- ⇒ Identify, segregate, and package wastes determined to be straight low level only
- ⇒ Decontaminate and package wastes that will be removed from RCRA via decontamination process
- ⇒ Identify, segregate, package and dispose materials/wastes destined for PU & D, landfill and other non-haz / non-rad dispositioning (e.g., battery recycling)

#### 6.2 Schedule

This schedule includes dates for completing necessary packaging of low-level mixed debris and the treatment of any hazardous debris resulting from the cleanup of the Solar Ponds:

- The anticipated completion date for packaging of low-level mixed debris is June 30, 1998
- The anticipated completion date for the treatment of any hazardous debris resulting from the cleanup of the Solar Ponds is September 30, 1998

#### 6.3 Handling & Shipment

Waste segregation, handling, storage and shipment will be controlled in accordance with this document, WGI, site waste packaging procedures, Rocky Flats Environmental Technology Site (RFETS) part B Permit as well as ultimate disposal facility requirements. Any other process or procedure identified that adds an appropriate control to this process will also be incorporated.

**Table 1-1**

**Solar Ponds Characterization Study**

Table 1-1 Solar Ponds Debris Characterization Study

| Area | Physical Location  | Description of Material          | Process Knowledge of Usage  | Process Knowledge of Contamination   | Photo?   | Disposition                            |
|------|--|----------------------------------|---|--|--|--|
| 1    | North-East of C Pond<br>just outside B788                | Bulldozer<br>(Crated & Tarped)   | The bulldozer was used to move pond material.   | This was in direct contact with Low Level Mixed<br>Waste   | 50204-22<br>50205-22                               | Low Level Mixed Waste - LLMW           |
| 2    | North East of C Pond                                     | 5 MT Corrugated Metal Containers | These containers are empty and were never used  | This material has never contacted hazardous or<br>radiological waste   | 50204-22/23<br>50205-05<br>50205-21/22<br>50205-24 | Property Utilization & Disposal PU & D |
| 3    | North East of C Pond                                     | Concrete Barricade               | Used to control direction and movement of supplies<br>and hold down light materials   | This material has never contacted hazardous or<br>radiological waste   | 50204-24   | PU & D                                 |
| 4    | North-East of C Pond                                     | Concrete Barricade               | Used to control direction and movement of supplies<br>and hold down light materials   | This material has never contacted hazardous or<br>radiological waste   | 50204-24   | PU & D                                 |
| 5    | North-East of C Pond<br>on the South Side of the<br>Road | Empty metal and poly drums       | These drums are unused The drums were brought<br>down to support the emptying of the 207C Solar Pond<br>The drums were not used | This material has never contacted hazardous or<br>radiological waste The drums have never entered a<br>radiologically posted area or a RMMA The drums<br>have never come in contact with DOE controlled<br>radioactive material. | 50204-23/24  | PU & D and Sanitary Landfill           |
| 6    | North-East of C Pond<br>on the South Side of the<br>Road | Empty metal and poly drums       | These drums are unused The drums were brought<br>down to support the emptying of the 207C Solar Pond<br>The drums were not used | This material has never contacted hazardous or<br>radiological waste The drums have never entered a<br>radiologically posted area or a RMMA The drums<br>have never come in contact with DOE controlled<br>radioactive material. | 50204-23/24  | PU & D and Sanitary Landfill           |
| 7    | North-East of C Pond<br>on the South Side of the<br>Road | Large Pontoon Boat (Tarped)      | The skimmer was used on the ponds   | This was in direct contact with Low Level Mixed<br>Waste   | 50204-23<br>50205-23/24                            | LLMW                                   |



Table 1-1 Solar Ponds Debris Characterization Study

| Area | Physical Location                                  | Description of Material      | Process Knowledge of Usage   | Process Knowledge of Contamination                                | Photo?  | Disposition                          |
|------|--|------------------------------|--|---|---|--------------------------------------|
| 8    | North-East of C Pond                               | Used Tires                   | Utilized on equipment used to move pond material   | These were in direct contact with Low Level Mixed Waste           | 50205-23/24   | LLMW                                 |
| 9    | North-East of C Pond on the South Side of the Road | Small Pontoon Boat (Tarped)  | The skimmer was used on the ponds  | This was in direct contact with Low Level Mixed Waste             | 50205-15  | LLMW                                 |
| 10   | North East of C Pond                               | Miscellaneous Wood Scraps    | Unknown.   | This material may have been in contact with Low Level Mixed Waste | No  | LLMW                                 |
| 11   | North East of C Pond                               | Metal Box with a pump inside | Box used as a funnel for pond material Pump may have been used to transfer pond material | This was in direct contact with Low Level Mixed Waste             | 50205-05  | LLMW                                 |
| 12   | North-East of C Pond                               | 8" O D Metal Pipe            | The pipe was used to transfer pond material  | This material was used to transport Low Level Mixed Waste         | 50205-01<br>50205-05  | LLMW                                 |
| 13   | North-East of C Pond on the South Side of the Road | Morgan Pumper (Tarped)       | Used to move pond material.  | This was in direct contact with Low Level Mixed Waste             | 50204-23/24<br>50205-01<br>50205-05<br>50205-08<br>50205-23 | Decon, Pack as Low Level Waste - LLW |
| 14   | North of C Pond                                    | Pumps                        | Pumps may have been used to transfer pond material.                                      | This material may have been in contact with Low Level Mixed Waste | 50205-01  | LLMW                                 |

Table 1-1 Solar Ponds Debris Characterization Study

| Area | Physical Location                             | Description of Material    | Process Knowledge of Usage                    | Process Knowledge of Contamination                                | Photo?  | Disposition        |
|------|---|----------------------------|---|---|---|--------------------|
| 15   | North of C Pond                               | Pump & Flanges             | This material is unused                       | This material is new / never used                                 | 50205-01  | PU & D             |
| 16   | North East of C Pond                          | CASE Front End Loader      | Used to move pond material                    | This was in direct contact with Low Level Mixed Waste             | 50205-19<br>50205-24  | Decon, Pack as LLW |
| 17   | North East of C Pond                          | Skytrack Front End Loader  | Used to move pond material                    | This was in direct contact with Low Level Mixed Waste             | 50204-24<br>50205-05<br>50205-08<br>50205-19<br>50205-23/24 | Decon, Pack as LLW |
| 18   | North East of C Pond                          | John Deer Front End Loader | Used to move pond material                    | This was in direct contact with Low Level Mixed Waste             | 50204-24<br>50205-04<br>50205-06<br>50205-08<br>50205-19    | Decon, Pack as LLW |
| 19   | North of C Pond on the South Side of the Road | Electrical Panel           | Used for intended purpose as electrical panel | This material has never contacted hazardous or radiological waste | 50205-01  | Sanitary Landfill  |
| 20   | North of C Pond on the South Side of the Road | Spool of Rope              | This material is unused                       | This material has never contacted hazardous or radiological waste | No  | Sanitary Landfill  |
| 21   | North of C Pond on the South Side of the Road | Electrical Panel           | Used for intended purpose as electrical panel | This material has never contacted hazardous or radiological waste | 50205-04/05   | PU & D             |

Table 1-1 Solar Ponds Debris Characterization Study

| Area | Physical Location                                  | Description of Material             | Process Knowledge of Usage   | Process Knowledge of Contamination                                | Photo?                           | Disposition        |
|------|--|-------------------------------------|--|---|----------------------------------|--------------------|
| 22   | North East of C Pond on the North Side of the Road | One pallet containing two tires     | Pickup Truck   | Unknown.  | 50205-01                         | LLMW               |
| 23   | North of C Pond                                    | Compressor                          | Used for intended purpose as compressor  | This material has never contacted hazardous or radiological waste | 50205-01<br>50205-04             | PU & D             |
| 24   | North of C Pond                                    | Pump                                | Appears to be unused   | Appears to be unused  | 50205-01<br>50205-04             | PU & D             |
| 25   | North East of C Pond on the South Side of the Road | Large Metal Stand                   | Used to hang signs   | This material has never contacted hazardous or radiological waste | 50205-04/05                      | PU & D             |
| 26   | North of C Pond                                    | Concrete Barricade                  | Used to control direction and movement of supplies and hold down light materials | This material has never contacted hazardous or radiological waste | 50205-01<br>50205-04<br>50205-06 | PU & D             |
| 27   | North of C Pond                                    | Salt Buster Attachment for Skytrack | Used to move pond material.  | This was in direct contact with Low Level Mixed Waste             | No                               | Decon, Pack as LLW |
| 28   | North of C Pond                                    | Attachment #425555 for Skytrack     | Used to move pond material.  | This was in direct contact with Low Level Mixed Waste             | No                               | Decon, Pack as LLW |

Table 1-1 Solar Ponds Debris Characterization Study

| Area | Physical Location  | Description of Material                     | Process Knowledge of Usage   | Process Knowledge of Contamination  | Photo?                           | Disposition       |
|------|--|---|--|---|----------------------------------|-------------------|
| 29   | North of C Pond  | Miscellaneous Metal Scrap                   | Unknown  | Unknown   | 50205-06                         | LLMW and PU & D   |
| 30   | North-East of C Pond<br>on the South Side of the<br>Road | Small Boat                                  | The boat was used on the ponds   | This was in direct contact with Low Level Mixed<br>Waste But is visually clean and Rad Surveys indicate<br>that the boat is not contaminated            | 50205-01<br>50205-04/05          | Sanitary Landfill |
| 31   | North of C Pond  | 2 Pumps on Pallets                          | May have been used to transfer pond material   | Unknown, but visually clean.  | 50205-01<br>50205-04<br>50205-06 | LLMW              |
| 32   | North-East of C Pond<br>on the South Side of the<br>Road | Bag of empty one liter bottles with netting | The bottles contained unused oils that were used on the<br>equipment in Building 788 and the 207C Solar Pond | This material has never contacted hazardous or<br>radiological waste The bottles have never come in<br>contact with DOE controlled radioactive material | 50205-06                         | Sanitary Landfill |
| 33   | North of C Pond  | Metal Box with some fiberglass inside       | This material is unused  | This material has never contacted hazardous or<br>radiological waste  | 50205-01<br>50205-06/07          | PU & D            |
| 34   | North of C Pond  | Miscellaneous Plastic Scraps                | Unknown  | Unknown   | No                               | LLMW              |
| 35   | North of C Pond  | MT Metal Drum                               | Unknown  | Unknown   | 50205-07                         | LLMW              |

Table 1-1 Solar Ponds Debris Characterization Study

| Area | Physical Location                                  | Description of Material                  | Process Knowledge of Usage                                  | Process Knowledge of Contamination   | Photo?                  | Disposition                             |
|------|--|--|---|--|-------------------------|---|
| 36   | North-East of C Pond                               | Used Tire                                | Utilized on equipment used to move pond material            | These were in direct contact with Low Level Mixed Waste  | 50205-07                | LLMW                                    |
| 37   | North of C Pond                                    | Miscellaneous Wood Scraps                | Used to support contaminated and non-contaminated equipment | This material may have been in contact with Low Level Mixed Waste  | 50205-01<br>50205-07/08 | LLMW                                    |
| 38   | North of C Pond                                    | Pump on Pallet                           | May have been used to transfer pond material                | Unknown, but visually clean.   | 50205-08                | LLMW                                    |
| 39   | North of C Pond                                    | Several Pumps on Pallets                 | Some are new / never used, some appear to be used           | Unknown, but visually clean.   | 50205-08                | Used Pumps - LLMW<br>New Pumps - PU & D |
| 40   | North-East of C Pond on the South Side of the Road | One pallet containing miscellaneous wire | This material is unused                                     | This material has never contacted hazardous or radiological waste. The wire has never entered a radiologically posted area or a RMMA. The wire has never come in contact with DOE controlled radioactive material.         | 50205-08                | Sanitary Landfill                       |
| 41   | North of C Pond                                    | Sweeper Attachment                       | This equipment is unused                                    | This material has never contacted hazardous or radiological waste  | No                      | PU & D                                  |
| 42   | North-West of C Pond on the North Side of the Road | One pallet containing PVC pipe           | This material is unused                                     | This material has never contacted hazardous or radiological waste. The PVC pipe has never entered a radiologically posted area or a RMMA. The PVC pipe has never come in contact with DOE controlled radioactive material. | 50205-09                | Sanitary Landfill                       |

Table 1-1 Solar Ponds Debris Characterization Study

| Area | Physical Location                                  | Description of Material                  | Process Knowledge of Usage                         | Process Knowledge of Contamination   | Photo?      | Disposition       |
|------|--|--|--|--|-------------|-------------------|
| 43   | North West of C Pond on the North Side of the Road | Pallet of 4" Hose                        | This material is unused                            | This material has never contacted hazardous or radiological waste  | 50205-09/10 | Sanitary Landfill |
| 44   | North West of C Pond on the North Side of the Road | MTI Wood Pallet                          | Used for intended purpose as pallet                | This material has never contacted hazardous or radiological waste  | 50205-10    | Sanitary Landfill |
| 45   | North-West of C Pond on the North Side of the Road | One pallet of rubber air hose            | This material is unused                            | This material has never contacted hazardous or radiological waste  | 50205-10    | Sanitary Landfill |
| 46   | North-West of C Pond on the North Side of the Road | Pallet of Unused 1" PVC Tubing           | This material is unused                            | This material has never contacted hazardous or radiological waste  | 50205-10    | Sanitary Landfill |
| 47   | North-East of C Pond on the North Side of the Road | One pallet of miscellaneous rubber hoses | This material is unused                            | This material has never contacted hazardous or radiological waste. The rubber hose has never entered a radiologically posted area or a RMMA. The rubber hose has never come in contact with DOE controlled radioactive material. | 50205-11    | Sanitary Landfill |
| 48   | North-West of C Pond on the North Side of the Road | One pallet of rubber air hose            | This material is unused                            | This material has never contacted hazardous or radiological waste. The air hose has never entered a radiologically posted area or a RMMA. The air hose has never come in contact with DOE controlled radioactive material.       | 50205-11    | Sanitary Landfill |
| 49   | North of C Pond on the North Side of the Road      | 4 Plastic Laundry Carts on a Pallet      | Used only to contain non hazardous / non rad items | This material has never contacted hazardous or radiological waste  | 50205-11    | Sanitary Landfill |

Table 1-1 Solar Ponds Debris Characterization Study

| Area | Physical Location                                  | Description of Material   | Process Knowledge of Usage  | Process Knowledge of Contamination  | Photo?   | Disposition                  |
|------|--|---|---|---|----------|------------------------------|
| 50   | North of C Pond on the North Side of the Road      | 3 Pump Valves on a Pallet   | Unknown, but visually clean.  | Unknown, but visually clean, assume non haz / non rad - will verify with visual and rad survey  | 50205-11 | PU & D                       |
| 51   | North of C Pond on the North Side of the Road      | 1 Pallet of Miscellaneous Metal                                   | Unknown, but visually clean.  | This material has never contacted hazardous or radiological waste   | 50205-11 | PU & D                       |
| 52   | North of C Pond on the North Side of the Road      | 1 Pallet of Metal Siding  | Siding from temporary building erected around the Morgan Pumper   | This material has never contacted hazardous or radiological waste   | No       | PU & D                       |
| 53   | North East of C Pond on the North Side of the Road | One pallet containing a spool of wire                             | This material is unused   | This material has never contacted hazardous or radiological waste. The wire has never entered a radiologically posted area or a RMMA. The wire has never come in contact with DOE controlled radioactive material | 50205-12 | PU & D                       |
| 53   | North East of C Pond on the North Side of the Road | One pallet containing two batteries                               | Spent Batteries   | This material has never contacted hazardous or radiological waste   | 50205-12 | PU & D                       |
| 54   | North-East of C Pond on the North Side of the Road | Empty poly tank Serial # G-150191                                 | This tank is unused   | This material has never contacted hazardous or radiological waste. The tank has never entered a radiologically posted area or a RMMA. The tank has never come in contact with DOE controlled radioactive material | 50205-12 | PU & D                       |
| 55   | North of C Pond on the North Side of the Road      | 1 MT Full Wood Crate 2 Wood Pallets, 1 Fork Truck Battery Charger | Wood items are unused. The charger was used in B788 but was never in direct contact with hazardous or rad waste | This material has never contacted hazardous or radiological waste   | 50205-12 | PU & D and Sanitary Landfill |

Table 1-1 Solar Ponds Debris Characterization Study

| Area | Physical Location                                      | Description of Material                          | Process Knowledge of Usage                 | Process Knowledge of Contamination  | Photo?   | Disposition                               |
|------|--|--|--|---|----------|---|
| 56   | North of C Pond on the North Side of the Road          | 3 Half Wood Crates of Unknown Contents           | Unknown                                    | Unknown   | 50205-12 | Will open crates and investigate contents |
| 57   | North of C Pond on the North Side of the Road          | 1 Full and 1 Half MT Wood Crates 1 Metal Housing | These items are unused                     | This material has never contacted hazardous or radiological waste   | 50205-12 | PU & D and Sanitary Landfill              |
| 58   | North of C Pond on the North Side of the Road          | MT Wood Pallet                                   | Used for intended purpose as wooden pallet | This material has never contacted hazardous or radiological waste   | 50205-03 | Sanitary Landfill                         |
| 59   | North of C Pond on the North Side of the Road          | 2 Spools of Metal Crane Cable                    | This material is unused                    | This material has never contacted hazardous or radiological waste   | 50205-03 | PU & D                                    |
| 60   | North East of C Pond on the Far North Side of the Road | Four pallets of netting                          | This material is unused                    | This material has never contacted hazardous or radiological waste The netting has never entered a radiologically posted area or a RMMA The netting has never come in contact with DOE controlled radioactive material | 50205-02 | To Be Reutilized                          |
| 61   | North West of A Pond                                   | Miscellaneous Metal (Signs & Scansons)           | Used for intended purpose as warning signs | This material has never contacted hazardous or radiological waste   | No       | PU & D                                    |
| 62   | Between Building 788 and A Pond                        | Wood Bench                                       | Used for intended purpose as a bench.      | This material has never contacted hazardous or radiological waste   | No       | Sanitary Landfill                         |



Table 1-1 Solar Ponds Debris Characterization Study

| Area | Physical Location                         | Description of Material                                     | Process Knowledge of Usage  | Process Knowledge of Contamination  | Photo?   | Disposition   |
|------|---|---|---|---|----------|---|
| 62   | Between Building 788 and A Pond           | Wood Table  | Used for intended purpose as a table  | This material has never contacted hazardous or radiological waste   | No       | Sanitary Landfill                                       |
| 63   | Pump House 1 North-East of A Pond         | Various   | This material is unused But there is some piping in the building that has been used to transfer pond material | This material has never contacted hazardous or radiological waste with the exception of some piping in the building | 50204-20 | Piping - LLMW<br>Balance - PU & D and Sanitary Landfill |
| 64   | North-West of the North B Pond            | Miscellaneous Metal (Signs & Scansons)                      | Used for intended purpose as warning signs  | This material has never contacted hazardous or radiological waste   | No       | PU & D  |
| 65   | North-West of the Middle B Pond           | Submersible Pump with 4" Hose Attached                      | Used in the removal of Pond material  | These materials were in direct contact with Low Level Mixed Waste   | 50204-18 | LLMW  |
| 66   | West of the Middle B Pond close to A Pond | Plastic Drum with Miscellaneous Metal Scraps                | Used to support various ropes and piping systems  | This material has never contacted hazardous or radiological waste   | No       | PU & D  |
| 67   | North-West of the Middle B Pond           | 4 Wheeled Cart loaded with electrical cords and small hoses | This was pulled across the ponds to help remove the waste material  | These materials were in direct contact with Low Level Mixed Waste   | 50204-18 | LLMW  |
| 68   | West of the Middle B Pond close to A Pond | Plastic Drum with Miscellaneous Metal Scraps                | Used to support various ropes and piping systems  | This material has never contacted hazardous or radiological waste   | 50204-15 | PU & D  |

Table 1-1 Solar Ponds Debris Characterization Study

| Area | Physical Location                         | Description of Material  | Process Knowledge of Usage   | Process Knowledge of Contamination                                | Photo?                  | Disposition       |
|------|---|--|--|---|-------------------------|-------------------|
| 69   | South West of the Middle B Pond           | 1 MT Half Wood Crate   | Used for intended purpose as wooden crate  | This material has never contacted hazardous or radiological waste | 50204-14                | Sanitary Landfill |
| 70   | South-West of the Middle B Pond           | Box of Natural Gas Piping (Yellow) and Fire Suppression Piping (Red) | The yellow piping was used to transport natural gas from B910 to the Solar Pond Heater/Soaker Unit, which is located at the west of the middle B Pond. The gas was only used for its heating capacity. The fire suppression piping is just excess piping | This material has never contacted hazardous or radiological waste | 50204-14                | PU & D            |
| 71   | South West of the Middle B Pond           | Miscellaneous Metal and Debris                                       | Used in the removal of Pond material.  | These materials were in direct contact with Low Level Mixed Waste | 50204-13/14             | LLMW              |
| 72   | West of the Middle B Pond close to A Pond | Plastic Drum with Miscellaneous Metal Scraps                         | Used to support various ropes and piping systems   | This material has never contacted hazardous or radiological waste | 50204-17                | PU & D            |
| 73   | Between the A Pond and the Middle B Pond  | Electrical Conduit Piping ~ 1 1/2" O D                               | This conduit was never used  | This material has never contacted hazardous or radiological waste | 50204-12                | PU & D            |
| 73   | Between the A Pond and the Middle B Pond  | Natural Gas Piping (Yellow)  | This piping was used to transport natural gas from B910 to the Solar Pond Heater/Soaker Unit which is located at the west of the middle B Pond. The gas was only used for its heating capacity   | This material has never contacted hazardous or radiological waste | 50204-09                | PU & D            |
| 73   | Between the A Pond and the Middle B Pond  | Various Hoses  | Some of the hoses in this area were used, some were not. It is too difficult to distinguish. Used to pump pond material.   | This material was used to transport Low Level Mixed Waste         | 50204-10/11<br>50204-12 | LLMW              |

Table 1-1 Solar Ponds Debris Characterization Study

| Area | Physical Location    | Description of Material                                    | Process Knowledge of Usage  | Process Knowledge of Contamination                                | Photo?                  | Disposition       |
|------|----------------------|--|---|---|-------------------------|-------------------|
| 73   | South-East of A Pond | Metal Piping ~ 6" O D                                      | This Piping was used to transport material to the Heater/Soaker and from pond to pond   | This material was used to transport Low Level Mixed Waste         | 50204-09                | LLMW              |
| 73   | South-East of A Pond | Natural Gas Piping (Yellow)                                | This piping was used to transport natural gas from B910 to the Solar Pond Heater/Soaker Unit, which is located at the west of the middle B Pond. The gas was only used for its heating capacity | This material has never contacted hazardous or radiological waste | 50204-09                | PU & D            |
| 73   | South-East of A Pond | Polyethylene Floats (Black) with closed ends               | These were used to float hoses across the ponds   | These were in direct contact with Low Level Mixed Waste           | 50204-09                | LLMW              |
| 73   | South-East of A Pond | Polyethylene Piping (Black) ranging in O D from ~ 2" to 6" | Contractor was installing a system around the ponds and never finished. This is excess material that was never used   | This material has never contacted hazardous or radiological waste | 50204-09                | Sanitary Landfill |
| 73   | South-East of A Pond | Various Hoses  | Some of the hoses in this area were used, some were not. It is too difficult to distinguish. Used to transfer pond material.  | This material was used to transport Low Level Mixed Waste         | 50204-10/11<br>50204-12 | LLMW              |
| 73   | South-East of A Pond | Various Pumps  | Some of the pumps in this area were used, some were not. It is too difficult to distinguish. Used to transfer pond material.  | This material was used to transport Low Level Mixed Waste         | 50204-10/11<br>50204-12 | LLMW              |
| 74   | South-East of A Pond | Miscellaneous Metal (Signs & Scansions)                    | Used for intended purpose as warning signs  | This material has never contacted hazardous or radiological waste | No                      | PU & D            |

Table 1-1 Solar Ponds Debris Characterization Study

| Area | Physical Location  | Description of Material   | Process Knowledge of Usage                             | Process Knowledge of Contamination                                   | Photo?      | Disposition |
|------|--|---|--|--|-------------|-------------|
| 75   | South-East of B788<br>(Between the Building<br>and A Pond) | Miscellaneous Equipment & Debris  | Will disposition after clarifier MT Project            | Will disposition after clarifier MT Project                          | No          | TBD         |
| 76   | Between the C Pond<br>and Building 788                     | Miscellaneous Lay-Down Area for Metals<br>Wood and Plastics             | Used to support the removal of pond material           | This material may have been in contact with Low Level<br>Mixed Waste | 50205-19    | LLMW        |
| 77   | South-East of C Pond                                       | Miscellaneous Metal<br>(Signs & Scansions)                              | Used for intended purpose as warning signs             | This material has never contacted hazardous or<br>radiological waste | No          | PU & D      |
| 78   | South East of C Pond                                       | Miscellaneous Debris (i.e Plastic Shovels,<br>Fittings Hoses Brooms)    | The debris in this area used to transfer pond material | These materials were used to transport Low Level<br>Mixed Waste      | 50205-17/18 | LLMW        |
| N/A  | Inside the A Pond  | Miscellaneous Unusable Debris (i.e Shovels,<br>Fittings Hoses, Brooms)  | The debris in this area used to transfer pond material | These materials were used to transport Low Level<br>Mixed Waste      | 50204-21    | LLMW        |
| N/A  | Inside the C Pond  | Miscellaneous Unusable Debris (i.e Shovels,<br>Fittings, Hoses, Brooms) | The debris in this area used to transfer pond material | These materials were used to transport Low Level<br>Mixed Waste      | No          | LLMW        |
| N/A  | Inside the Middle-B<br>Pond                                | Miscellaneous Unusable Debris (i.e Shovels<br>Fittings, Hoses Brooms)   | The debris in this area used to transfer pond material | These materials were used to transport Low Level<br>Mixed Waste      | No          | LLMW        |

Table 1-1 Solar Ponds Debris Characterization Study

| Area | Physical Location       | Description of Material   | Process Knowledge of Usage                              | Process Knowledge of Contamination                           | Photo? | Disposition |
|------|-------------------------|---|---|--|--------|-------------|
| N/A  | Inside the North-B Pond | Miscellaneous Unusable Debris (i.e Shovels, Fittings, Hoses Brooms) | The debris in this area used to transfer pond material. | These materials were used to transport Low Level Mixed Waste | No     | LLMW        |
| N/A  | Inside the South B Pond | Miscellaneous Unusable Debris (i.e Shovels, Fittings Hoses Brooms)  | The debris in this area used to transfer pond material. | These materials were used to transport Low Level Mixed Waste | No     | LLMW        |

**Figure 1-1**

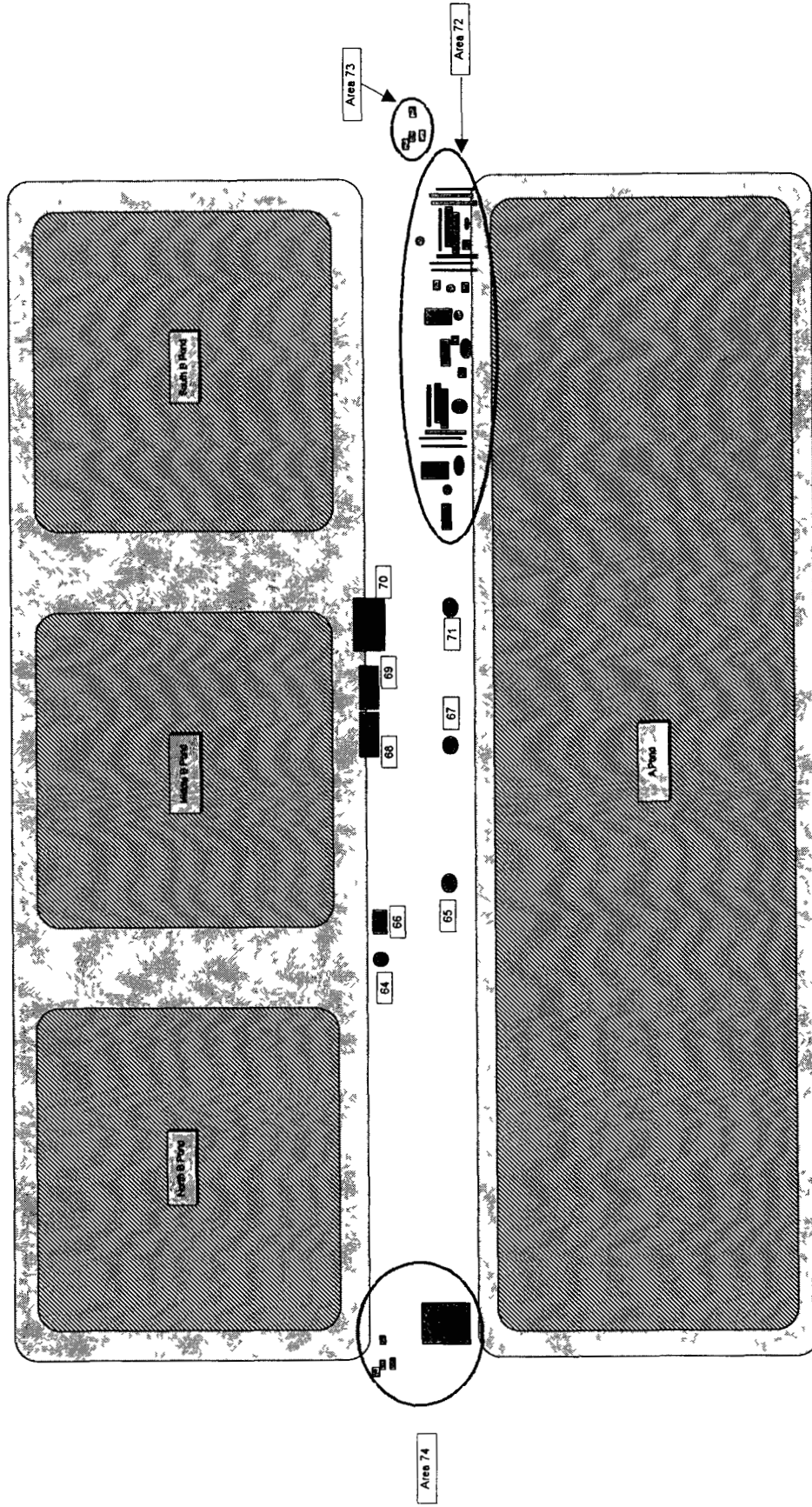
**Solar Ponds Debris Location Diagrams**







Detail of Debris Location between A B Ponds



## **Appendix 1**

### **Photographs**









Solar Ponds Debris Characterization 11/4/97 Photo # 50204-13

